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Effects of Tobacco Products on the Nervous System

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Annotation: Smoking is a voluntary poisoning not only of oneself, but also of others. The harm of smoking on the human body is determined primarily by the high content of harmful substances in the composition of tobacco smoke:

- nicotine;
- carbon monoxide;
- prussic acid;
- hydrogen sulfide;
- carbon dioxide;
- ammonia;
- pyridine bases;
- radioactive isotopes

Since nicotine enters the human body in small doses, addiction develops, and the symptoms of acute poisoning are absent. During his life, a smoker smokes about 15 thousand lethal doses of nicotine. Smoking harms almost all organ systems.

Keywords: mucous membrane, anaerobic microbes, nicotine consumption.

This addiction increases the risk of coronary heart disease and hypertension by 4-6 times, and lung cancer by 10. Smokers are 5-8 times more likely to die from cardiovascular diseases and live on average 8-10 years less than none—smokers.

Tobacco consumption causes a number of dental diseases and side effects. The consequences of smoking from the oral cavity are as follows:

- change in taste sensitivity;
- dark brown or black "smoker's plaque" on the teeth;
- bad breath;
- gum and periodontal diseases (periodontitis);

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- leukoplakia of the mucous membrane (inflammation by the type of keratinization);
- oral cancer.

This effect of smoking on the oral cavity is due to the following factors:

Chemical — cigarette smoke contains more than 4,000 toxic compounds ;

1. thermal — due to high temperature (300°With smoldering tobacco, 900-1000 ° C at the moment of tightening and 40-60 °With tobacco smoke) the blood supply to the gums is disrupted, which leads to vascular sclerosis and gum tissue atrophy ;
2. Smoking can lead to the appearance of an unpleasant mouth odor – halitosis. The reasons for this are as follows:
3. nicotine, tar and other tobacco combustion products lingering in the oral cavity have a specific smell;
4. the decrease in the amount of oxygen in the oral cavity caused by smoking leads to an increase in the number of anaerobic microbes, as well as to the breakdown of proteins;
5. in smokers, the mucous membrane becomes dry – its peeling increases;
6. Smoking is a risk factor for the development of inflammation in periodontal tissues and the appearance of tartar.

Smokers have an increased content of pathogenic microbes in the oral cavity that affect periodontal tissues. The peculiarity of the clinical picture of periodontitis is insignificant external signs of inflammation and at the same time sharply progressive loss of bone tissue.

Tobacco tar, consisting of liquid and solid fractions, settles on the walls of the airways, accumulating in the alveoli of the lungs. Some of these compounds come out with sputum when coughing, and some are absorbed into tissues and enter the bloodstream.

The lungs of smokers function worse than those of non-smokers. There is a narrowing of the bronchi, a violation of gas exchange develops and, as a consequence, oxygen insufficiency. According to the data described, as a result of path anatomic studies, it was found that the lungs of a forty-year-old smoker look like the lungs of a non-smoker aged 75-80 years.

The main symptoms of respiratory system disorders in tobacco smoking are chronic shortness of breath and cough with sputum. Tobacco smoke is often the cause of persistent breathing problems.

Bronchial asthma, chronic obstructive pulmonary disease, tuberculosis and pneumonia are what smoking can lead to. Tobacco negatively affects the course of these diseases: promotes the appearance of extensive lung tissue lesions and pronounced destructive alterations.

In recent years, there has been an increase in the incidence of lung cancer against the background of nicotine consumption, due to an increase in the number of not only active, but also passive smokers.

There is a relationship between the frequency of tobacco consumption and the development of oncology of the respiratory system. In heavy smokers, lung cancer is detected 70 times more often than in non-smokers.

In 30-35% of cases, it is nicotine that is the main cause of the development of the above diseases.

Tobacco smoke is the most common of the known carcinogens. Smoking causes irreparable harm to the body: the components of cigarette smoke are able to form mutagenic compounds with DNA, which lead to damage to genes, the occurrence of mutations and the subsequent development of oncological diseases.

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Human health depends, among other things, on the state of the psyche, which determines the level of intelligence, memory, personality traits, emotional background, and behavior.

One of the powerful factors that have a destructive effect on a person's mental health is smoking. This is due to the active effect of various substances contained in tobacco smoke on the work of the brain and nervous system.

In the first 10 seconds after inhaling smoke, nicotine penetrates the brain and begins to affect neurons — working cells of the nervous system. Nicotine acts as a lock pick, forcing the brain to produce:

1. Norepinephrine (NA) – acts as a stimulant. It determines the level of wakefulness of the brain and is responsible for concentration of attention. It increases blood pressure, increases the heart rate and respiration, which contributes to the working mobilization of the body. That is why people who smoke believe that cigarettes help them focus better and increase their performance. However, without nicotine, smokers begin to experience difficulties with concentration.
2. Serotonin is a neurotransmitter responsible for emotional stability. With its lack, a person becomes irritable, feels a lack of positive emotions, has problems sleeping. Serotonin deficiency can be associated with unexpected and unexplained tears, suicidal thoughts and actions.
3. Dopamine is commonly called a neurotransmitter of pleasure. This substance is produced at the moment when a person experiences satisfaction from what is happening. Dopamine is also responsible for good feelings towards other people. With a lack of this neurotransmitter, a person perceives life as joyless and colorless, experiences an inability to love, does not feel remorse about his own behavior.
4. Gamma-aminobutyric acid is a substance that causes a sense of calm. Lack of GABA leads to the appearance of "free-floating anxiety" and panic attacks.

Nicotine causes vasospasm, thereby increasing blood pressure. The walls of the vessels are damaged; cholesterol plaques are deposited on them. These factors are the main cause of the development of cardiovascular diseases up to myocardial infarction. The vessels of the smoker's brain are also damaged — due to the deterioration of blood supply, memory decreases and the risk of paralysis increases.

If a pregnant woman smokes, the oxygen concentration in the fetal blood decreases by 2 times. Toxic compounds that enter her body along with cigarette smoke worsen the digestibility of vitamins, increasing the risk of serious abnormalities in the child, as well as inhibit his growth and development.

Smoking contributes to the development of split palate and lip ("cleft palate" and "cleft lip"), defects of the cardiovascular and nervous systems in the baby.

In addition, children whose mothers used nicotine during pregnancy are prone to obesity, bronchial asthma, allergies, and also have increased excitability and learning problems.

The intake of nicotine into a woman's body complicates the course of pregnancy: the risk of placental abruption in smokers' increases by 65%, which can lead to the death of both the child and the mother. Tobacco products increase the likelihood of miscarriage, premature birth and sudden fetal death.

The harm from passive smoking is equivalent to smoking light cigarettes. A pregnant woman who spends more than 3 hours a day indoors with tobacco smoke has the same risk of having a baby with a reduced body weight as if she smoked herself.

It is important to understand that smoking is harmful for both women and men, and you should give up this habit at the stage of pregnancy planning. This will help not only to avoid problems with conception, but also to bear a healthy child.

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